

1. A system comprising:  
1 a least three processors; and  
2 an optical transceiver coupled to each processor,  
3 each transceiver including a wavelength division  
4 multiplexer to enable optical communication with the other  
5 two processors.

1 2. The system of claim 1 wherein each transceiver  
2 includes an optical transmitter including a laser.

1 3. The system of claim 1 wherein each transceiver  
2 includes an optical receiver tunable to a particular input  
3 wavelength.

1 4. The system of claim 1 wherein each processor is  
2 assigned a wavelength for communicating with the other  
3 processors.

1 5. The system of claim 1 wherein said transceiver  
2 includes a reflective wavelength coupler.

1 6. The system of claim 5 wherein said reflective  
2 wavelength coupler includes an elliptical reflector.

1           7.    The system of claim 6 wherein said coupler  
2 includes an dispersive element to disperse light reflected  
3 by said reflector.

1           8.    The system of claim 7 wherein said dispersive  
2 element includes a microelectromechanical structure.

1           9.    The system of claim 1 wherein each transceiver  
2 transmits a light beam together with a code identifying a  
3 sending and a receiving processor.

1           10.   The system of claim 1 wherein, when one processor  
2 is receiving a wavelength division multiplexed signal from  
3 another processor, the one processor broadcasts to all  
4 other processors that the one processor is busy.

1           11.   A method comprising:  
2                establishing a system including at least three  
3 processors; and  
4                enabling optical communications between said  
5 processors using wavelength division multiplexing.

1           12.   The method of claim 11 including assigning a  
2 unique wavelength to each of said processors.

1           13. The method of claim 11 including scanning for the  
2 wavelengths of any of said other processors.

1           14. The method of claim 13 including transmitting a  
2 light beam having a predetermined wavelength, and  
3 transmitting a code that identifies the transmitting  
4 processor and the intended receiving processor.

1           15. The method of claim 14 wherein the receiving  
2 processor identifies the wavelength of the incoming beam  
3 and the code accompanying said beam, and locks to the  
4 wavelength of the transmitting processor.

1           16. The method of claim 15 including notifying a  
2 first processor when a second processor is receiving a beam  
3 from a third processor.

1           17. The method of claim 16 including broadcasting the  
2 fact that the second processor is receiving a beam to all  
3 other processors in the system.

1           18. The method of claim 17 indicating when said  
2 second processor is no longer communicating with said third  
3 processor.

1        19. The method of claim 19 including using a code  
2 transmitted by the third processor to determine if a given  
3 processor is the intended recipient of a beam transmitted  
4 from the third processor.

1        20. The method of claim 11 including optically  
2 interconnecting each of said processors.

1        21. An article comprising a medium storing  
2 instructions that enable a first processor-based system to:  
3            identify a light communication from a second  
4 processor-based system intended for said first processor-  
5 based system;  
6            tune to said wavelength; and  
7            notify a third processor-based system that said  
8 first processor-based system is tuned to said wavelength.

1        22. The article of claim 21 further storing  
2 instructions that enable the first processor-based system  
3 to scan through a plurality of wavelengths of other  
4 processor-based systems to identify a signal intended for  
5 said first processor-based system.

1        23. The article of claim 21 further storing  
2 instructions that enable the first processor-based system  
3 to receive a code that indicates whether a given light

4 communication is intended to be sent to said first  
5 processor-based system.

1 24. The article of claim 23 further storing  
2 instructions that enable said first processor-based system  
3 to tune to said wavelength to the exclusion of other  
4 wavelengths.

1 25. The article of claim 24 further storing  
2 instructions that enable said first processor-based system  
3 to broadcast a signal indicating that said first processor-  
4 based system is tuned exclusively to said wavelength.

1 26. The article of claim 25 further storing  
2 instructions that enable the first processor-based system  
3 to notify a third processor-based system when said first  
4 processor-based system is no longer engaged in a  
5 communication with said second processor-based system.

1 27. The article of claim 21 further storing  
2 instructions that enable said first processor-based system  
3 to identify a second processor-based system to communicate  
4 with and to determine whether said second processor-based  
5 system is currently occupied with a communication with  
6 another processor-based system.

1           28. The article of claim 21 further storing  
2 instructions that enable said first processor-based system  
3 to communicate with at least two other processor-based  
4 systems using optical communications and wavelength  
5 division multiplexing.

1           29. The article of claim 28 further storing  
2 instructions that enable said first processor-based system  
3 to communicate with other processor-based systems using an  
4 assigned wavelength.

1           30. The article of claim 29 further storing  
2 instructions that enable said first processor-based system  
3 to transmit a code that identifies said first processor-  
4 based system and an intended receiving processor-based  
5 system.